CURRICULUM VITAE

Jayanta Kumar Ghosh

PERSONAL DATA
Nationality: Indian
Sex: Male
Marital Status: Married
Born: April 15, 1962
Place of birth: Guwahati, India

CONTACT ADDRESS
Civil Engineering Department
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Present Position
Associate Professor , INDIAN INSTITUTE OF TECHNOLOGY ROORKEE.

Areas of Interests
Geospatial Technology (Land Surveying, Remote Sensing, GNSS, Geodesy),
Artificial Intelligence, Soft computations.

Research Interests
(i)   Satellite Image Interpretation
(ii)   Geospatial Technology for Societal Applications.
(iii)   Technology & Automated System Development

Education
1997   Ph.D. (Civil Engineering) INDIAN INSTITUTE OF TECHNOLOGY ROORKEE,
INDIA [Erstwhile University of Roorkee]
[Thesis: Mapping of Tea- Gardens from Satellite Images - A Fuzzy Knowledge
Based Image Interpretation System]

Education(contd.)

1990	M.Tech (Civil Engineering), INDIAN INSTITUTE OF TECHNOLOGY KANPUR INDIA
	[Thesis: Mapping of Jharia/ Raniganj Coal Fields Using Remote Sensing Images]
1984	B.E (Civil Engineering), INDIAN INSTITUTE OF SCIENCE, ENGINEERING and TECHNOLOGY [Erstwhile Bengal Engineering College Shibpur]

Awards & Fellowships

2018	**Life Time Achievement Award "NATIONAL GEOSPATIAL AWARD FOR EXCELLENCE – 2017" by Indian Society of Remote Sensing.**
2012	Best paper award in GEOMATRIX 12 at IIT Bombay (February 26-29, 2012) for the paper titled: "Variogram Fractal Dimension Based Features for Hyper-spectral Data Dimensionality reduction".
2009	Indian Society for Remote Sensing (ISRS) Award for best paper published in JISRS (Photonirvachak) for "RS & GIS Analysis Techniques" category for the year 2008.
2009	ERASMUS MUNDUS EU research fellow at, Instituto Superior de Estatística e Gestão de Informação (ISEGI) Lisbon, Portugal.
2009	Won FIG Foundation Award 2009 for research paper "GEOWARNS: A System to Warn Geo-deformation Failure".
2007	DAAD Post-Doctoral fellowship for Research work at Germany.
1984	1st prize winner in the National Design Competition among Civil Engineering Students held by National Research and Design Forum of Institution of Eng (I).
1979	State (Assam) merit scholar.
1977	National (India) Scholar.

Professional Training Received

2015	Bernese GNSS Software V5.2 Introduction Course, University of Bern, Switzerland.
2009	GAMIT/GLOBK Advanced Users Workshop at C-MMACS Bangalore India.
2000	Global Positioning System and its application. Indian Institute of Remote Sensing Dehradun, India.
1994	Device Drivers for Personal Computers, University of Roorkee, India.
1994	Application of Finite Element method in Engineering. IIT Kharagpur, India.
1992	Oil Pollution; Monitoring, Prevention and Control. University of Roorkee, India.
1986	Optimisation Techniques in Process Engineering. IISc Bangalore, India.

Academic Positions held

2012 – Present	Associate Professor, Department of Civil Engineering IIT Roorkee, India
2009	Visiting Professor, Instituto Superior de Estatística e Gestão de Informação (ISEGI), Portugal.
1998-2012	Assistant Professor, Department of Civil Engineering IIT Roorkee, India.
1985 –1998	Lecturer, National Institute of Technology Silchar, India.

Courses Taught

Under Graduate
Geomatics-I (2015,2016, 2017, 2018)
GPS & its applications (2010, 2011, 2012, 2013)
Digital Image Processing (2011, 2012)
Principles of Surveying (1985-88, 1990-1993, 2003, 2004,   2006, 2007, 2008, 2013)
Engineering Graphics (1998 to 2005)
Engineering Mechanics (1985-88)
Numerical Methods and Computer Programming (FORTRAN and C) 1999
Computer Systems and Programming (C++) (2002)

Post Graduate
Basic Remote Sensing (1998)
Advances in Remote Sensing (2010, 2011)
Hyperspectral Remote Sensing (2008, 2010, 2012)
Remote Sensing for LU/ LC Analysis and Mapping (2003)
Fuzzy Image Processing (2005)
Introduction to Geodesy and GPS Surveying (2012 to 2018)
GPS Surveying (2003 to 2008)
Geodetic Surveying (1999 to 2004)
Expert System, Neural Network and Fuzzy Systems (2006 to 2010)
Advanced Programming and Computer Graphics (2004)

Doctoral Theses Supervised

Awarded Doctoral Theses

2018	9. A Cognitive method for Object Detection from Satellite Images.
	8. A comparative evaluation of Methods for Development of Indian Geoid Model.
	7. Target Detection Using Hyperspectral Images in thermal Infra-red Band.
2017	6. Approaches for Detection and Identification of Targets Using Remote Sensing data.
2016	5. Soft Computation Based Indian Topographic Map Understanding System (ITMUS).
2013	4. Site-Specific Estimation of PWV (Precipitable Water Vapor) using GPS data.
2012	3. Remote Sensing Based Forest Cover mapping Using Recent Techniques.
	2. Fractal Analysis to Reduce the Dimensionality of Hyper spectral Data.
	1. Development of a Geo-Hazard Warning Communication System .

Ongoing Doctoral Theses

1. Unmanned System for Acquisition of Geospatial Data.
2. Psycho-visual Based Image Segmentation.
3. Mixed-pixel Analysis of Hyper-spectral data.
4. Development of an Intelligent Pipeline route alignment system for natural Gas.

Master's Theses Supervisied

Awarded Master's Theses

2018	36. Astro-Meteorological Prediction of Rainfall - A Knowledge Based Approach. 35. Application of Geomatics in BIM for Civil Construction.
2017	34. Strategic Study of Noise Pollution using Geomatics Techniques. 33. Development of Smart Village Models for few Parameters using Geomatics Techniques.
2016	32. Air Quality Analysis using remote sensing data. 31. Structural Health Monitoring using GPS data.
2015	30. Water Quality Mapping and Analysis in a Stretch of Upper Ganga Canal. 29. Development of GPS Based System for Monitoring of Speed Vehicle. 28. A Comparative Study of Dimensionality Reduction of Indian Hyperspectral Data. 27. GPS Based Health Monitoring of a Cable Stayed Foot Bridge.
2014	26. Regional Study of Earth Tides. 25. An accuracy assessment of GPS data. 24. A study of impact of rainfall on land-slope stability using Geomatics technique.
2013	23. Development of a software for Dimensionality Reduction of Hyperspectral RS Data. 22. A comparative study of Ambiguity Resolution of GPS Observations.
2012	21. GPS network adjustment using Kalman Filter 20. ANN based modeling for prediction of rainfall from GPS and meteorological data. 19. Prediction of Ionospheric error in GPS data.
2011	18. Study of Few Dimensionality Reduction Algoritms for Hyperspectral RS Data. 17. Soft computation of satellite data for land cover information.
2010	16. Determination of Pavement Deterioration Model Using ANN. 15. Meshless method for Infinite Beams on Elastic Foundation. 14. Analysis of FRP Web Core Bridge Deck Structure. 13. Approaches for Quality Assessment for Change Detection. 12. ANN analysis of Geo-data.
2009	11. Static and Dynamic Analysis of Mansa Devi Hill Landslide using Flac 3D and DEM.
2008	10. Development of a GPS based Deformation Monitoring System. 9. Simulation studies of Kalman Filtering on state vectors of GPS receiver. 8. Analysis of structural deformation based on GPS data.

2007	7. Water Vapor Estimation Using GPS. 6. Development of a Landslide Hazard Assessment System. 5. Accuracy Assessment of Sub-pixel Classification.
2006	4. Fractal Based Image Analysis.
2005	3. Some Accuracy Assessment Methods for Fuzzy Classification of RS Data- A Comparative Study.
2000	2. Development of a software for Land Cover Classification from satellite data using ANN. 1. Expert System for Drainage Pattern.

Ongoing Master's Theses

1. Building Material Analysis using remote sensing
2. Geospatial Siting of a Residential Township.

Salient Research Contributions

1. Developed a generalized system for automated extraction of geo-spatial information (as required by geo-spatial community i.e., layers for GIS) from Indian Topographic maps.
2. Developed a geo-hazard warning system capable of sending warning automatically anticipating the occurrence of landslide.
3. Introduced fractal analysis of hyper spectral data: a spectral feature based image analysis method implemented for reduction of dimensionality of HyRS images.
4. Developed method for segmentation of ambiguous boundary region as well as sub-pixel classification of satellite images.
5. Developed of an automated system for task-specific interpretation from satellite images emulating an image analyst.
6. Developed methods for detection and identification of targets (camouflaged objects, poisonous gas, spectrally similar objects etc) having significance in modern warfare using TIR.
7. Developed analytical method and model for identification and quantitative evaluation of land cover abundances in a two-class hyper-spectral data.
8. Developed model for assessment of soil-fertility of an agricultural land using HyRS.
9. Developed Indian Geoid Models using geometric and astro-geodetic methods.
10. Developed local models for site-specific estimation of PWV using GPS data.
11. Developed an unmanned system for automated acquisition of geospatial data for from inaccessible/ hazardous area such as radioactive mines etc.

Publication **(Details in Annexure-I)**

Research Papers : 108.
Text Books: 2
Chapter of books: 2
Monographs : 2
Patent : 01
Editor : 1

Funded Research Projects

2012-2014   Dimensionality Reduction of Hyper-spectral Remote Sensing Data by ISRO, DOS, 1.502 Million INR.

2008-2011   Development of an automated Warning System (SLIDEWARN) for monitoring of Mansa Hill (Haridwar) Landslide, 460,000 INR.

2007-2010   Estimation of PWV using GPS by DST, 1.012 Million INR.

1999-2002   Development of a decision support system for Landslide in a North-Eastern Region using Satellite and ancillary data in a GIS environment, by AICTE 0.5Million INR.

Conference Organized

2018   International Conference on "GEOMATICS IN CIVIL ENGINEERING" [ICGCE-2018] April 05-06, at IIT Roorkee

Short Term Courses Organized

2007   Short term course on "GPS Surveying" February 05-09.

2006   Special training course on "Rural Infrastructure Development", May 2-26, for NABARD, India.

2005   Short term course on "GPS Surveying" November 28 to December 02.

2004   Short term course on "GPS Surveying" July12-16.

2003-2004   Short term course on "GPS and its application " December 29, - January 03.

2002   Short term course on "GPS Surveying" June 3-12.

2001   Training program on GPS during September 5-8.

Miscellaneous (Details in Annexure II)

Invited Lectures delivered
Academic Foreign Visits
Membership of Professional Bodies
Reviewer of Journals

DETAILS OF PUBLICATIONS

Papers in refereed journals

Published (46):

2018   46. YADAV, Deepti; Arora M.K., Tiwari K.C., **Ghosh, J.K.** Detection and Identification of Camouflaged Targets using Hyperspectral and LiDAR data. Defence Science Journal, vol. 68, n. 6, p. 540-546, oct. 2018.

2017   45. Upendra Nath Mishra and **Jayanta Kumar Ghosh** (2017). "DEVELOPMENT OF A GEOID MODEL BY GEOMETRIC METHOD", Journal of The Institution of Engineers (India): Series a, Springer, Vol. 98, Issue 4 (Dec.2017), pp. 437-442.
44. Naveen Chandra and **Jayanta Kumar Ghosh** (2017). A Cognitive Framework for Road detection from High Resolution Satellite Images, , *Geocarto International.* doi.org/10.1080/10106049.2018.1450451.
43. Deepti Yadav, M. K. Arora, K. C. Tiwari and J. K. Ghosh," Parameters affecting detection in VNIR and SWIR range", Egyptian Journal of Remote Sensing and Space
        Science, Elsevier, Oct 2017. doi.org/10.1016/j.ejrs.2017.08.004
42. Naveen Chandra and **Jayanta Kumar Ghosh** (2017). A Cognitive Method for Building Detection from High Resolution Satellite Images, *Current Science*, Vol.112, No.5, March 2017, pp.1038-1044 .
41. Vinay Kumar and **Jayanta Kumar Ghosh** (2017). Camouflage Detection using MWIR Hyperspectral Images, Journal of the Indian Society of Remote Sensing, 45 (1), 139-145.

40. Naveen Chandra and **Jayanta Kumar Ghosh** (2017). A Cognitive Viewpoint on Building Detection from Remotely Sensed Multispectral Images, *IETE Journal of Research*, pp.1-11. doi.org/10.1080/03772063.2017.1351320.

2016   39. Upendra Nath Mishra and **Jayanta Kumar Ghosh** (2016). Development of a

Gravimetric Geoid Model and a Comparative study, Journal of Geodesy &

Cartography 2016, 42(3): 75–84, (September).

38.Vinay Kumar and **Jayanta Kumar Ghosh** (2016). Object Detection in Hyperspectral Images using spectral derivative, Journal of the Indian Society of Remote Sensing, 1-8. (DOI: 10.1007/s12524-016-0627-9)

37. **Ghosh. J.K**. and U. Mishra (2016). Determination Of Geoid Undulation By Astro-Geodetic Method, ASCE Journal of Surveying Engineering, Volume 142, Issue 3 (August 2016).

2015

36. N.G. Ganpatrao and **J. K. Ghosh** (2015). Indian Topographical Map Symbols Understanding System, IET Computer Vision, The Institution of Engineering and Technology, Vol.9, Issue 2, pp. 300–308 (April).

35. **Ghosh. J.K**. and S. Pathak (2015). A study on variation in Position of an Indian Station due to Solid Earth Tides, Journal of Earth System Science, 124, No. 3, pp. 603–612 (April).

34. **Ghosh. J.K**., D.Bhattacharya, P.Boccardo and N.K.Samadhiya. Automated Geo-Spatial Hazard Warning System GEOWARNS: An Italian Case Study, ASCE Journal of Computing in Civil Engineering, 2015, 29(5),04014065 [**COPY ENCLOSED**]

2014

33. Bhattacharya, Devanjan, **J. K. Ghosh**, J. Komarkova, S. Banerjee and H. Kutoglu. Distributed GIS for Automated Natural Hazard Zonation Mapping Internet SMS Warning towards Sustainable Society, Cogent Engineering,1, 961346.

32. D. Singh, D., **J.K. Ghosh**, D. Kashyap. Precipitable water vapor estimation in India from GPS-derived Zenith delays using radiosonde data, Meteorology and Atmospheric Physics, 123:209–220.

31. D. Singh, D., **J.K. Ghosh**, D. Kashyap. Weighted mean temperature model for extra tropical region of India. Journal of Atmospheric and Solar- Terrestrial Physics 107, 48–53.

30. Mukherjee K, A. Bhattacharya, **J.K.Ghosh** and M.K.Arora. Comparative performance of fractal based and conventional methods for dimensionality reduction of hyperspectral data, Optics and Lasers in Engineering, Vol 55, pp 267-274 (April). [**COPY ENCLOSED**]

29. N.G. Ganpatrao and **J. K. Ghosh**. Information extraction from topographic map using colour and shape analysis, Journal of the Indian Academy of Sciences, SADHANA, October 2014, Volume 39, Issue 5, pp 1095-1117

2013

28. Bhattacharya,D., **J.K. Ghosh**, P. Boccardo and J. Komarkova. Automated Geo-Spatial System for Generalized Assessment of Socio-Economic Vulnerability due to Landslide in a Region, European Journal of Remote Sensing, Volume: 46 Pages: 379 - 399

27. Sharma, N and **J. K. Ghosh**. Sevcik's Fractal Based Dimensionality Reduction of Hyper-Spectral Remote Sensing Data, International Journal of Computer Science and Technology, Vol.4, Issue 2, April-June, pp 52-55.

26. Kriti Mukherjee, **Jayanta K Ghosh** and Ramesh C. Mittal (2013). Variogram Fractal Dimension Based Features for Hyperspectral Data Dimensionality Reduction, Photonirvachak**,** Journal of Indian Soc Remote Sens, Vol. 41 No.2 (June), 249-258.

2012   25. Gitanjali G. Nikam and **J. K. Ghosh**. Soft Computation Based Topographic Map Legend Understanding Prototype System, International Journal of Soft Computing and Engineering (IJSCE) ISSN: 2231-2307, Volume-3, Issue-1, March 2013, pp. 116-120

24. Varshney, A., M. K. Arora and **J.K. Ghosh**. Median change vector analysis algorithm for land use land cover change detection from remote sensing data, International Journal of Remote Sensing Letters Vol. 3, No. 7, 10 December 2012, 605–614.

23. D. Bhattacharya, **J. K. Ghosh** and N. K. Samadhiya. A Review Of Geo-Hazard Warning Systems Towards Development Of A Popular Usage Geo-Hazard Warning Communication System, ASCE Natural Hazards Review, November.

22. D. Singh, **J.K. Ghosh** and D. Kashyap. The temporal variation of mean gravity of atmosphere, Advances in Space Research 50, 7 (October) 963–972.   21**.** **J. K. Ghosh**, D. Bhattacharya, P. Boccardo and N. K. Samadhiya. A Generalized Geo- Hazard Warning System, Natural Hazards, Volume 64

Number 2

20. D. Singh, **Ghosh, J.K**. and D. Kasyap. Development of a site specific ZHD model using Radiosonde data, Journal Acta Geodaetica et Geophysica Hungarica, Vol. 47 (1), pp Vol. 47, No.1 (March), pp. 90-100
19. Mukherjee, K., **Ghosh, J.K**., and Mittal, R.C. Dimensionality Reduction of Hyperspectral Data Using Spectral Fractal Energy Features", Geocarto International Vol. 27, No. 6, October 2012, 515–53.
18**. Ghosh, J.K**, D. Singh and A. Dubey. Comparative study of zenith hydrostatic models for PWV estimation over Bangalore, Journal of Geomatics   Vol. 6 No. 1.

2011   17. Bhattacharya, D, **J. K. Ghosh**, P. Boccardo and N. K. Samadhiya. Wireless Hazard Communication System, Journal of Systems and Information Technology, Vol. 13, Issue 4, October 10, 2011.
2010   16. **Ghosh, J.K.** and D. Bhattacharya. A Knowledge Based Landslide Susceptibility Zonation System, ASCE Journal of Computing in Civil Engineering, Vol.24, No.4, pp.325-334.

2009   16. **Ghosh, J.K.,** A. Singh and K. Mukherjee. Detection of Anomaly in Water Body using Hyperspectral Images, Journal of Geomatics Vol. 3 No. 2 pp 53-56 15. **Ghosh, J.K.** and A. Dubey. Impact of India's New Map Policy on Accuracy of GIS theme, Photonirvachak, Journal of Indian Society of Remote Sensing, Vol. 37, No. 1 pp 1-7 (June).

2008   14. **Ghosh, J.K.,** R. Goel and K. Mukherjee (2008). Measures Based on Fuzzy Correlation Coefficient for Accuracy assessment of Fuzzy Classification, International Journal of Geoinformatics, Vol.4, No.4, 09-16 (December).

13. Devanjan Bhattacharya and **Jayanta Kumar Ghosh**. An Evaluation of Knowledge Representation Schemes as a Pre-requisite towards development of a Knowledge Based System. ASCE Journal of Computing in Civil Engineering, Vol.22, No.6 pp 348-359 (November/December).

12. **J.K. Ghosh** and Singh, A. Fractal Compression Of Satellite Images, Photonirvachak, Journal of the Indian Society of Remote Sensing, Vol. 36, No. 4 pp 299-311 (December) <u>(Won ISRS best paper award 2008).</u>

11. **J.K. Ghosh** and A. Singh. Fractal Based Dimensionality Reduction of Hyper- spectral Images, Photonirvachak, Journal of Indian Society of Remote Sensing, Dehradun, Vol. 36, No.3 pp 235-241 (September)

10. Ghosh, J.K. and A. Dubey. Sensitivity Analysis of GPS Estimated PWV. Journal of Geomatics Vol.2, No.1 pp 37-42, (April)

9. **J.K. Ghosh**, A. Singh, and R.C.Mittal. Fractal Feature for Classification of Hyper- spectral Images of Moffit Field, USA, Current Science, Vol. 94, No. 3, pp 356-358 (February).

8. **Ghosh, J.K** and A. Dubey. India" s New Map Policy – Utility of Civil User**,** Journal of Current Science, Vol. 94, No. 3, pp 332-337 (February).

2006   7. **Ghosh, J.K**, O. Sharma and A. Goyal. GPS Based Control Points for Mapping, Coordinate, A Journal on Navigation, October 2006, pp 24-27.

2005   6. **Ghosh, J. K**., K. Kishore, M. Juhuri and D. Sodani. Measurement of deflection of a bridge, **Coordinate**, A Journal on Navigation, August 2005, pp 23- 24.

2004   5. **Ghosh, J.K.** Automated Interpretation of Sub-pixel Vegetation from IRS LISS-II Images, International Journal of Remote Sensing, Volume 25, No. 6, 1207-1222 (June). [**COPY ENCLOSED**]

2002   4. **Ghosh, J.K**., Godbole, P.N., and Ghosh, S.K. Automated Interpretation of Sub-pixel Water Cover from Satellite Images, Photonirvachak, the Journal of the Indian Society for Remote Sensing, Vol. 30, No.1 & 2 pp 53-59.

3**. Ghosh, J.K**. Global Positioning System and its Application. Indian Journal of Continuing Engineering Education, January 2002 (pp 42-48).

2001   2. **Ghosh, J.K**. Automated Mapping of Vegetation from Satellite data, Geoinformation Science Journal, Vol.1, No. 2, 61-65 (April).

1984   1. **Ghosh, J.K**. Land Treatment as a Waste Water Management Alternative, Journal of the Institution of Engineers (India), Students' Journal, Vol. 64, Pt.S 3, pp 84-85.

Accepted (3):

2018 49. Deepti Yadav, M. K. Arora, K. C. Tiwari and **J. K. Ghosh**," Identification of most useful spectral ranges in improvement of target detection using hyperspectral data", Egyptian Journal of Remote Sensing and Space Science, Elsevier.(Accepted).

48. **Jayanta Kumar Ghosh,** Vinay Kumar, Ajay Kumar , Sudipta Sarkar and   Ajay Kumar Patel. pH Analysis of water using MWIR Hyperspectral Images,   Current Science (Accepted)

47. Vinay Kumar, **Jayanta Kumar Ghosh**, Dharmendra Singh and Ajay Kumar Patel. Detection and mapping of a gas in a Hyperspectral Image, Remote Sensing Letters (Accepted)

Papers in conference proceedings

Fully Peer-Reviewed Conference Papers

2018 59. Ashu Sharma and **Jayanta Kumar Ghosh**, (2018), Dominance of perceptual grouping over functional category: an eye tracking study of high-resolution satellite images,"SPIE-2018, Berlin, Germany

2017 58. Ashu Sharma, **Jayanta Kumar Ghosh**, (2017), A Bottom-Up Saliency-Based

Segmentation for High-Resolution Satellite Images, CVIP 2017, IIT-Roorkee Gr Noida, Pages 169-180

2016 57. Naveen Chandra, **Jayanta Kumar Ghosh** and Ashu Sharma, A Cognitive Based Approach for Building Detection from High Resolution Satellite Images, *IEEE international conference on computing communication and automation*, pp.1-5, 2016".

56. Deepti Yadav, M. K. Arora, K. C. Tiwari, **J. K. Ghosh**, "Fusion of HSI and LiDAR data for improving detection of man-made targets, " International workshop on Remote Sensing Image Analysis at IIT Bombay on April 16-18, 2016

55.Deepti Yadav, M. K. Arora, K. C. Tiwari, **J. K. Ghosh**, "Performing target specific band reduction using artificial neural networks and assessment of its efficacy using various target detection algorithms," Proc. SPIE 9845,Optical Pattern Recognition XXVII , 984507 SPIE Defence and Security, 17-21 April 2016, Baltimore, USA

54.Deepti Yadav, M. K. Arora, K. C. Tiwari, **J. K. Ghosh**, "An Assessment of Effects of Various Parameters on Target Detection Using Hyperspectral Data," Proc. SPIE 9880, Multispectral, Hyperspectral, and Ultraspectral Remote Sensing Technology,

Techniques and Applications VI, 988023, SPIE Asia–Pacific Remote   Sensing, 4-7 April 2016, New Delhi, India.

53. Naveen Chandra, Jayanta Kumar Ghosh and Ashu Sharma, A Cognitive   Method for Object Detection from Aerial Image, IEEE international conference on advances in computing communication and automation, pp.327-330, 2016.

52. Naveen Chandra, Jayanta Kumar Ghosh and Ashu Sharma, A Cognitive Perspective on Road Network Extraction from High Resolution Satellite Images, *IEEE*   international conference on next generation computing technologies, pp.772-776, 2016

2015   51. Naveen Chandra, Jayanta Kumar Ghosh and Ashu Sharma, A Cognitive   Analysis for Building Detection from High Resolution Satellite Images, International Conference   on Cognition Brain and Computation, 2015

2014   50. Sharma Ashu, Ghosh J.K., "Saliency Based Segmentation of Satellite

Images", Photometric Image Analysis + High Resolution Earth Imaging for Geospatial Information, Munich, Germany (Accepted).

49. Deepti Yadav, M. K. Arora, K. C. Tiwari, J. K. Ghosh, ", "Spectral Discrimination   using Neural Network for Target Detection" National conference on Recent Advances in Computer Science and Engineering, 8-9 Nov, 2014, (IEEE   Explore).

2013   48. Mishra, U and **J. K. Ghosh** (2013). A Study of Determination of GEOID Undulation by Astrogeodetic Method, ION GNSS+ 2013, September 16-20, 2013, Nashville, Tennessee USA.

2012   47. Gitanjali G. Nikam and J. K. Ghosh (2012). Indian Topographic Map   Symbols Understanding System, Proceedings of the 2013 IEEE Second International Conference on Image Information Processing (ICIIP-2013), pp. 33-38.

46. Mukherjee K, **J.K. Ghosh** and R.C. Mittal. Variogram fractal dimension based features fo hyperspectral data Dimensionality reduction, GEOMATRIX-

12, An international conference on Geospatial Technologies & Applications, February 26-29, Mumbai [AWARDED Best paper award].

45. Mathew, A.P and **J. K. Ghosh**. A comparative study of nonlinear dimensionality reduction algorithms for hyperspectral data**,** GEOMATRIX-12, An international conference on Geospatial Technologies & Applications,   February 26-29, Mumbai.

44. Nikam G. G. and **J. K. Ghosh**. A Topographic Map Legend Understanding Prototype System, GEOMATRIX-12, An international conference on Geospatial Technologies & Applications, February 26-29, Mumbai.

43. Singh. D, **J.K.Ghosh a**nd D.Kashyap. Regional mean temperature model for estimation of precipitable water vapor, GEOMATRIX-12, An international conference on Geospatial Technologies & Applications, February 26-29, Mumbai.

2011   42. **Ghosh, J. K.** ALWES (Automated Landslide Early Warning System) – A Prototype System under Development, ION GNSS 2011, Portland USA (September 20-23).

2010   41. **J. K. Ghosh,** D. Bhattacharya, P. Boccardo and N. K. Samadhiya. A Landslide Hazard Warning System, International Archives of the Photogrammetry, Remote Sensing and Spatial Information Science, Volume XXXVIII, Part 8, pp 261-265.

40. **Jayanta Kumar Ghosh,** Devanjan Bhattacharya, Ankur Mundra, Yuvraj Singh, Vinayak Shrestha and Ram Bhuwan Chauhan , India. Geo-deformation Analysis Using GPS, XXIV FIG International Congress 2010 on "Facing the Challenges – Building the Capacity" Sydney, Australia, 11-16 April.

39. Bhattacharya, D, **J. K. Ghosh,** P. Boccardo and N. K. Samadhiya (2010). A Popular Usage based Hazard Warning System, International Conference Gi4DM 2010, Turin Italy (February 2-4)

2009   38. **Ghosh, J.K.** and K. Mukherjee. "Fractal Based Dimensionality Reduction of Hyper-spectral Images using power spectrum Method" Advances in Computational Vision and Medical Image Processing : Methods and Applications, Edited by João Manuel R.S. Tavares, R.M. Natal Jorge, Springer Publication, pp 89-94. (ISBN: 978-0-415-57041-1)

37. **Ghosh, J.K.** and K. Mukherjee. "Dimensionality Reduction Of Hyper-spectral Data: A Fractal Based Approach", WHISPERS 2009, IEEE workshop on Hyper-spectral Image and Signal Processing - Evolution in Remote Sensing, Grenoble, France 26-28, August.

36. **Ghosh, J. K**., Bhattacharya, D. and Samadhiya, N. K. (2009), "GEOWARNS: A System to Warn Geo-deformation Failure", *Procs . FIG Working Week 2009 Surveyors Key Role in Accelerated Development, Eilat, Israel,* Vol. 1 No. 1, pp. 1-12 [**FIG Award Winner]**

2008   35. **Ghosh, J.K.** and Bhattacharya, D. Landslide Hazard Automated Zonation (LHAZ) System. 12th International Conference of International Asociation for Computer Methods and Advances in Geomechanics (IACMAG), October 1-6, 2008, Goa, India (Double Peer Reviewed).

2006	34. Dubey. A and **J.K. Ghosh,** (2006). "India's New Map Policy - Utility of `Civil User" ISPRS TC-IV International Symposium on "Geospatial Data bases for sustainable Development" Goa Abstracts pp6.
2005	33. Singh. A, **J.K. Ghosh** and R.C.Mittal. Fractal Compression Of IRS LISS-II Images, 25th ISRS Annual Convention and National Symposium, "Emergence of Geoinformatics for Development : Trends & Opportnities", December 6-9,Ranchi India,, Compendium of abstract pp 214.
	32. **Ghosh, J.K.** and Sahil Suri. A Knowledge Based System for Assessment of Landslide Hazard, Proceedings of Indian Geotechnical Conference: IGC-2005, December 17-19, Ahmedabad, pp. 393-396.
2004	31. Lakkad, J and **J.K.Ghosh**. Fractal feature of land use class of satellite images. Proceedings of 46th International Symposium Elmar 2004. June 16-18, Zadar, Croatia pp 561-566.
2000	30. **Ghosh, J.K.,** Godbole, P.N., and Ghosh, S.K. Mapping of Tea Gardens from satellite Images- A Fuzzy Knowledge-Based Image Interpretation System. International Archives for Photogrammetry & Remote Sensing (Part-B).
1996	29. **Ghosh, J.K**. Computer Understanding of Sub-pixel Land Cover, in International Archives of Photogrammetry & Remote Sensing. Vol. XXX.
1992	28. **Ghosh, J.K.,** Lamar, H., and Roel, N. Forest Cover and Land Use Mapping of a region of Barak Valley of Assam, India using IRS LISS II imagery, in International Archives of Photogrammetry & Remote sensing. Vol. XXIX.
1991	27. **Ghosh, J.K**. and Rampal, K.K. Mapping of Mineralized Zone in Jharia/Raniganj Coal Fields using Remote Sensing Imagery at Congress VIII of International Society of Mine Surveying held at Lexington Kentucky, USA.

Other Conference Papers

2014   26. Sharma Ashu, Chandra Naveen, Ghosh J.K., "Salient Region Extraction of Satellite Image", Cognitive Computing & Information Processing, JSS Academy of Technical Education Noida (Communicated).

2011   25. Gitanjali G. Nikam and J. K. Ghosh (2011). A Map Legend Understanding System, Proceedings of the International Conference on Soft Computing for Problem Solving (SocProS 2011), IIT Roorkee, India, December 20-22, 2011, Vol. 131, No. 2, pp. 41-47. Advances in Intelligent and Soft Computing Volume 131, 2012, pp 53-62,

        24. Dinesh Singh and **Jayanta Kumar Ghosh**. Effect of Precipitable

        water Vapor in Microwave Propagation, 7th international Conference on

        Microwaves,   Antenna, Propagation and Remote Sensing (ICMARS – 2011),

        International   Center for Radio Science (ICRS), Jodhpur, India, December

        2011, Paper -147 (S7-04).

2010   23. 'Varshney, A., Arora, M. K. and **Ghosh, J.K**. " A Modified Change Vector Analysis Algorithm for Land Use Land Cover Change Detection from Remote Sensing Data" Conference Proceedings on remote sensing and GIS for environmental management (RSGIS-EM2010), 10 Aug., , Jamia Millia Islamia Delhi,India, pp.215-226.

2009   22. **Ghosh,   J.K.**   and   D.   Bhattacharya. "Landslide   hazard   warning system (LANDWARNS)", India Disaster Management Congress, New Delhi, November 4-6.

        21. **J.K. Ghosh** and Bhattacharya. D . A Knowledge Based System for Assessment of Impact of Landslide on Population of a region in Uttarakhand" at National Conference on " Geomatics and impact of climate change with specific reference to Mountain Eco-system" February 5, Dehradun.

2008   20. Verma, S., **J.K.Ghosh** and R. Yadav. Development of Deformation Monitoring System based on GNSS sensor, Proceedings of symposium of Location India 2008, February 7-8, Noida.

        19. **Ghosh, J.K.** An Automated System for Zonation of Landslide in Tehri-Garhwal District,   Uttarakhand   (India),   Proceedings   of   Conference   on   LANDSLIDE MANAGEMENT, present scenario and future directions, Roorkee, February 10-12.

18. Verma, S., **J.K.Ghosh** and R. Yadav. Development of a Prototype for Monitoring of Deformation, Proceedings of Conference on Challenges and Applications of Mathematical Modelling Techniques in Building Science and Technology (CAM2tBST), Roorkee, February 7-8.

17**. Ghosh, J.K**., Johri, M., Kishore, K., and Sodani, D. "Bridge Deflection Measurement Using Space Technology", Proc. of the International Conference on Civil Engineering in the New Millennium: Opportunities and Challenges (CENeM-2007), 150-year anniversary conference at Bengal Engineering and Science University, Shibpur, India, Vol. II, pp. 1137-1141.

16. Bhattacharya, D., and **Ghosh, J.K**., (2008), "Landslide Understanding System", Proc. of the International Conference on Civil Engineering in the New Millennium: Opportunities and Challenges" (CENeM-2007), 150- year anniversary conference at Bengal Engineering and Science University, Shibpur, India, Vol. III, pp. 1669-1672.

2007   15. **Ghosh, J.K.** and A. Singh. Land-Cover Anomaly Detection Using Hyperspectral Images. Proceedings of the National Conference on High Resolution Remote Sensing & Thematic Application, December 18-20, 2007 Kolkata Pp 101.

2006   14. **Ghosh**, **J.K**., S. Kumar and A. Dubey (2006). Precursor Of Earthquake Based On Geodetic Computation, 13th Symposium on Earthquake Engineering (13 SEE), December 18-20, Roorkee.

13. **Ghosh**, **J.K**., S. Vaibhav, K.Kishore, M. Juhuri and D. Sodani. Measurement of Deflection of Bridges Using GPS. Proceedings of National Symposium on Bridge Engineering March 24-25, Roorkee pp 605-611.

12. Singh. A, **J.K. Ghosh** and R.C.Mittal. Compression Ratio as Complexity Measure of Remote Sensing Images, Geomatics -2006, "Geomatics for Infrastructural Development", January 4-6, Chennai India.

11. Vaibhav, S and **J.K. Ghosh**. Geomatics Based Measurement of Bridge Deflection. Geomatics -2006, "Geomatics for Infrastructural Development", January 4-6, Chennai India pp.

2005   10. **Ghosh, J.K.** and K. Mukherjee. A Comparative Study Of Accuracy Assessment Methods For Fuzzy Classification Of Satellite Images**,** Proceedings of Map India 2005, 7 – 9 February, New Delhi.

2004	9. Mukherjee, K and **J.K. Ghosh**. GPS Based Fault Locator in Power Grid, Abstract 24th ISRS Annual Convention and National Symposium, "Converging Space Technologies for National development", November 3-5, Jaipur India pp 227-229.
	8. Lakkad, J and **J.K.Ghosh**. Fractal feature for land use class of satellite images, Abstract 24th ISRS Annual Convention and National Symposium, "Converging Space Technologies for National development", November 3-5, Jaipur India pp 119.
	7. Bhattachryaa. A and **J.K. Ghosh**. GPS Based Determination of Wind Force, Abstract 24th ISRS Annual Convention and National Symposium, "Converging Space Technologies for National development", November 3-5, Jaipur India pp 235-237.
	6. Ghosh, S and **J.K. Ghosh**. GPS Based Estimation of Real Time Agricultural Water Demand , Abstract 24th ISRS Annual Convention and National Symposium, "Converging Space Technologies for National development", November 3-5, Jaipur India pp 6-8. (Won Award in ISRS 2004)
2001	5. **Ghosh, J.K.,** Godbole, P.N., and Ghosh, S.K. Automated Mapping of Tea Gardens from satellite Images, All India Seminar on Infrastructural Development in Uttaranchal-Problems & Prospects (IN-D-U-2001), Roorkee October.
	4. Ghosh, J.K. and Ch. V.A. Rao, GPS Control Point Positioning. Asian GPS Conference held at New Delhi (October 29-30).
1999	3. **Ghosh, J.K**. Interpretation System for Sub-pixel Vegetation Cover, in Geoinformatics: Beyond 2000 an International Conference on Geoinformatics for Natural Resources Assessment, Monitoring and management held at Dehradun, India during March 9-11.
1997	2. **Ghosh, J.K**. Sub-pixel Water Cover Interpretation System, National Conference on Remote Sensing for Natural Resources with special emphasis on infrastructure development held at Hyderabad, November 26-28.
1995	1. **Ghosh, J.K**., Godbole, P.N., and Ghosh, S.K. VEXIN Vegetation EXpert Interpretation System Proceeding of International Workshop on International Mapping from Space held at Madras, India.

Books

2016	A Text Book On GPS Surveying (First Edition), CRC Press, US.
2010	Elementary Engineering Surveying, Studium Press, New Delhi

Monographs

2012   1. "Development of a Landslide Hazard Assessment System" LAP LAMBERT Academic Publishing GmbH & Co. KG, Germany, *published May 2012*.

2. "Development of a Geo-hazard Warning Communication System" LAP LAMBERT Academic Publishing GmbH & Co. KG, Germany, *published Aug 2012*.

Chapter of books

2012   "Fuzzy Knowledge Based GIS for Zonation of Landslide Susceptibility" by

J.K. Ghosh, D. Bhattacharya and S.K. Sharma Chapter 2 in "Applications

Of Chaos and Nonlinear Dynamics in Science and Engineering - Vol. 2,

Understanding Complex Systems, DOI 10.1007/978-3-642-29329-0_2, #
Springer-Verlag Berlin Heidelberg 2012 Editors - S. Banerjee, M. Mitra, L.

Rondoni, (http://www.springerlink.com/content/88x321100k07244h/)

2001   "Fuzzy Logic: Basic Concepts" in Geographical Information Science" published
by Geoinformatics Division Indian Institute of Remote Sensing Dehradun.

Editor

Proceedings of " Geomatics in Civil Engineeing" (Springer) [Ongoing]

Patent Filed

Title: Navigation System for an Autonomous Terrestrial Vehicle [Ref. No. 201711043997];
Application No.TEMP/E-1/44616/2017-DEL.

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Miscellaneous

Invited Lectures delivered

2018   IIEST Sibpur (Februay 2 & 3).
2016   National Workshop on Recent Advances in Civil Engineering (NWRACE) at
        Bankura Unnayani Institute of Engineering (October 28), 2016.
2014   "A UAV based Autonomous System for surveillance and proclamation of warning
        during disaster' in the SSTDM (Small satellite and Technological Development for
        Disaster management) at IISc Bangalore (April 02), India.
2014   "GPS for GIS" in the STTP on "GIS applications in Engineering" at NIT Silchar
        (January 17).
2012   "Geomatics for Small Hydro-power Projects" AHEC IITR, June 18 India.
2007   "E-learning in the Perspective of Surveying" at University of Applied Sciences,
        Karlsruhe, June 14 Germany.
2006   "Approach of IITR in VLBI program in India" at BARC, Mumbai, November 03.
2006   "GPS Surveying" at Birla Institute of Technology, Mesra. (September 3-5).
2004   "GPS Data Collection Analysis" in QIP STC on RS and GIS applications with
        special emphasis to Infrastructure Planning (June 8).
2003   "GPS for forest Surveying" Forest Survey of India, Dehradun.

Academic Foreign Visits

2011   **USA** International Conference ION GNSS 2011, Portland Oregon & presented a
        paper ALWES (Automated Landslide Early Warning System) – A Prototype
        System under Development.
2010   **JAPAN,** International Conference of ISPRS Technical Commission VIII
        Symposium at Kyoto, Japan.
2009   **PORTUGAL**, Instituto Superior de Estatística e Gestão de Informação (ISEGI),
        Universidade Nova de Lisboa, Portugal (ERASMUS MUNDUS EU fellow).
2009   **ISRAEL,** International Conference "Surveyors Key Role in Accelerated
        Development "FIG Working Week 2009 in Eilat, Israel.
2008   **ITALY**, Politecnico de Torino. Bi-lateral cooperation leading to exchange of
        Young Indian scholar for joint research project.
2007   **GERMANY**, University of Applied Sciences, Karlsruhe for Post- doctoral
        research work under DAAD.

Membership of Professional Bodies

Indian Society of Remote Sensing (ISRS) (Life Member) L-638
Indian Society of Geomatics (ISG) (Life Member) L-340
Indian National Cartographic Association (INCA) (Life Member) LM-938

Institution of Engineers (Ind) [IE] (Life Member) LM-111548
Indian Society for Technical Education (ISTE) (Life Member) LM-11258
Indian Society for Continuing Engineering Education (Life Member)

Reviewer of Journals

American Society of Civil Engineering Journal of Computing in Civil Engineering, USA
American Society of Civil Engineering Journal of Hazardous, Toxic, and Radioactive Waste, USA
Institute of Electrical and Electronice Engineers Geo-science Enginering, USA
International Journal of Remote sensing, UK
Advances in Space Research, France
Journal of Atmospheric and Solar-Terrestrial Physics, Elsevier
Fractals, Singapore
International Journal of Geoinformatics, Thailand.
Sadhana, Proceeding in Engineering Sciences of Indian Academy of Science.
Photonirvachak, Journal of the Indian Society of remote Sensing, India.